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High-resolution photoemission spectroscopy on intermediate valent Yb compounds: Surface effects and Anderson Impurity Model

S. Schmidt¹, D. Ehm¹, F. Reinert¹, O. Trovarelli², C. H. Booth⁴, R. Hauser³, S. Hüfner¹

¹ Universität des Saarlandes, Experimentalphysik, Saarbrücken, Germany

² Max-Planck-Institut für Chemische Physik fester Stoffe, Dresden, Germany

³ Institut für Experimentalphysik, Technische Universität Wien, Austria

⁴ Chemical Sciences Division, Lawrence Berkeley National Laboratory, USA

In our contribution we present temperature dependent high-resolution photoemission spectroscopy (PES) data on the $4f$ spectral function of various intermediate valent Yb-systems with Kondo temperatures in the range $10 \text{ K} < T_K < 150 \text{ K}$. The photoemission results are consistent with the predictions of the Single-Impurity-Anderson-Model (SIAM). However, the PES results reveal quantitative discrepancies compared to the results from bulk-sensitive measurements, i.e. the magnetic susceptibility or X-ray absorption spectroscopy (XAS). We conclude that the observed discrepancies may be the result of the existence of a sub-surface zone sampled by PES that is structurally and electronically different from the bulk material.